

REMARKS

Claim Objections

The claims have been amended in response to the Examiner's various objections to the claims. However, claim 4 has not been cancelled, as it is not a duplicate of claim 3. Claim 3 incorporates all of the limitations of both claim 1 and claim 2; whereas claim 4 incorporates all of the limitations of only claim 1.

Claim Rejections – 35 USC §103

Claims 1, 5-7 and 10 were rejected under 35 USC 103(a) as being unpatentable over Yasotharan et al. (U.S. Patent Publication No. 20040120409), in view of Branolund et al. (U.S. Patent Publication No. 20030086366), and in view of Kokkonen et al. (U.S. Patent No. 6,606,296). The rejection is respectfully traversed.

The Examiner cites Yasotharan et al. as disclosing general features of a prior art OFDM communication device, including multiplexing a training signal with transmit data. The Examiner acknowledges that Yasotharan discloses neither a preamble through a low-pass filter nor a zero amplitude reduced preamble signal, but then cites Branolund as showing a preamble through a low-pass filter and Kokkonen as showing a zero amplitude reduced preamble signal.

However, the DMT process of Branolund that includes zero-padded FFT's does not disclose or suggest use of a low-pass filter to "reduce a signal component to near zero amplitude" to generate an OFDM transmit signal as defined by the present claims. Further, Kokkonen does not disclose or suggest use of a zero amplitude reduced preamble signal to generate an OFDM transmit signal.

In Kokkonen, zero is set as an amplitude of data carriers in a reference signal so as to establish cross-correlation between a received signal and a reference signal. Data carriers are thus excluded from a transmitted reference

signal. However, according to the present invention, transmit data are included in an OFDM transmit signal.

The present invention, as defined by the present claim 1, replaces a reference signal component that is near a zero value, with zero. As shown in FIG. 2, that enables an amount of near-zero signal components in a synchronization preamble to be smaller. That in turn enables a reduction in the power required for transmitting the synchronization preamble. The cited prior art does not teach or suggest such a reduction in the amount of near-zero signal components in a synchronization preamble. Thus combining Yasotharan et al., Branlund et al., and Kokkonen et al. does not result in a teaching of the present invention as claimed in claim 1, and does not make the present invention obvious.

Independent claim 7 has been amended to recite “a receiver having a synchronization timing calculator for determining a cross correlation between a received signal and a second specified synchronization preamble, which is patterned the same as the first specified synchronization preamble, and calculating a synchronization position, which is shifted from a peak value position by a specified amount of time, in accordance with the determined cross correlation.” Such explicit shifting of a synchronization position is clearly not taught or suggested by the cited combinations of Yasotharan et al., Branlund et al., and Kokkonen et al. Support for the amendments to claim 7 are found in the last sentence of paragraph [0033] in the specification as originally filed. Applicant therefore respectfully submits that independent claims 1 and 7 are in proper condition for allowance and request that claims 1 and 7 may now be passed to allowance.

It is respectfully submitted that the remaining rejections of the Examiner regarding dependent claims 5, 6 that depend from claim 1 and dependent claim 10 that depends from claim 7 are moot in light of the above arguments. Applicant therefore respectfully submits that independent claims 5, 6 and 10 are

in proper condition for allowance and request that claims 1 and 7 may now be passed to allowance.

Claims 2 and 8 were rejected under 35 USC 103(a) as being unpatentable over Yasotharan et al. (U.S. Patent Publication No. 20040120409), in view of Branlund et al. (U.S. Patent Publication No. 20030086366), and in view of Kokkonen et al. (U.S. Patent No. 6,606,296), and further in view of Wu et al. (U.S. Publication No. 6850481). The rejection is respectfully traversed. Claim 2 depends from claim 1 and claim 8 depends from claim 7. For the reasons given above it is submitted that independent claims 1 and 7 are allowable and therefore claims 2 and 8 that depend respectively from Claims 1 and 7 should now be passed to allowance.

Claims 3, 4 and 9 were rejected under 35 USC 103(a) as being unpatentable over Yasotharan et al. (U.S. Patent Publication No. 20040120409), in view of Branlund et al. (U.S. Patent Publication No. 20030086366), and in view of Kokkonen et al. (U.S. Patent No. 6,606,296), and Wu et al. (U.S. Publication No. 6850481), and further in view of Klank et. al (U.S. patent No. 6,226,377). The rejection is respectfully traversed. Claims 3 and 4 depend from claim 1 and claim 8 depends from claim 7. For the reasons given above it is submitted that independent claims 1 and 7 are allowable and therefore claims 3, 4 and 9 that depend respectively from Claims 1 and 7 should now be passed to allowance.

No amendment is made for the purpose of narrowing the scope of any claim, unless Applicant had argued herein that such amendment is made to distinguish over a particular reference or combination of references. Any remarks made herein with respect to a given claim or amendment is intended only in the context of that specific claim or amendment, and should not be applied to other claims, amendments, or aspects of Applicant's invention.

The Applicant asserts that the application is now in condition for allowance. Reconsideration and allowance of the application is respectfully solicited. If the Examiner believes that there are any informalities which can be corrected by Examiner's amendment, or in the event that the Examiner deems

the present application non-allowable, a telephone call to the undersigned is respectfully solicited. Please charge any fees associated herewith, including extension of time fees, to 50-2117, Motorola Inc.

Respectfully submitted,
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